



# The Identity Status Continuum Revisited

## A Comparison of Longitudinal Findings With Marcia's Model and Dual Cycle Models

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**Abstract:** The developmental continuum of identity status has been a topic of theoretical debate since the early 1980's. A recent meta-analysis and recent studies with dual cycle models lead to two conclusions: (1) during adolescence there is systematic identity maturation; (2) there are two continuums of identity status progression. Both continuums show that in general adolescents move from transient identity statuses to identity statuses that mark the relative endpoints of development: from diffusion to closure, and from searching moratorium and moratorium to closure and achievement. This pattern can be framed as development from identity formation to identity maintenance. In Identity Status Interview research using Marcia's model, not the slightest indication for a continuum of identity development was found. This may be due to the small sample sizes of the various studies leading to small statistical power to detect differences in identity status transitions, as well as developmental inconsistencies in Marcia's model. Findings from this review are interpreted in terms of life-span developmental psychology.

**Keywords:** identity status, identity development, dual cycle models of identity, continuum of identity status, longitudinal research, adolescent development

Are identity statuses stable individual dispositions or do they change over time? The developmental nature of the identity status model has been a topic of debate since the early 1980's (Berzonsky & Adams, 1999; Côté & Levine, 1988; Meeus, Iedema, Helsen, & Vollebergh, 1999; Van Hoof, 1999; Waterman, 1988), and the dispute has not been settled yet. A core issue in the debate is the identity status continuum: what does this continuum look like, does it offer a theory of identity development, and does identity change unfold systematically along this continuum?

Initially Marcia (1966) framed the identity statuses in terms of individual differences and described them as "individual styles of coping with the psychosocial task of forming an ego identity" (p. 558). Later, he formulated the identity status continuum (Marcia, 1967, p. 119) as: "a continuum of ego identity based upon proximity of an individual to identity achievement is assumed to underlie the statuses." Waterman (1982) made the developmental assumption explicit by suggesting a developmental continuum of diffusion (D), foreclosure (F), moratorium (M) and achievement (A). Adolescents start in identity diffusion and move toward identity achievement through foreclosure

and moratorium. Although Waterman (1988, pp. 198-199) later acknowledged that the statuses foreclosure and moratorium could not be ordered on one continuum, identity status researchers continue to use the sequence D, F, M, A in their description of the model, thereby implicitly adhering to the developmental continuum as initially suggested by Waterman. Kroger, Martinussen and Marcia's (2010) meta-analysis offers a recent example of this routine.

A general theoretical question is whether the developmental continuum constitutes the core of a theory of identity development. The empirical questions with regard to the developmental continuum refer to identity maturation and to the dynamics of identity formation: identity status transitions. Identity maturation has been suggested by Waterman (1982) in the fundamental developmental hypothesis of the identity status model. The hypothesis predicts "a preponderance of progressive developmental shifts" (p. 343), that is changes out of diffusion into the direction of identity achievement. The dynamics of identity formation refer to the frequency of identity status change in adolescence and early adulthood: "how often do individuals

change their identity status?” As well as to “the sequence of identity status change that leads to identity maturation, for instance  $D \rightarrow F$ ,  $F \rightarrow M$ ,  $M \rightarrow A$ .” The aim of the present review is to re-address the identity status continuum and the dynamics of identity formation. Recent research into identity development (Kroger et al., 2010; Meeus, Van de Schoot, Keijsers, Schwartz, & Branje, 2010) and identity status and psychopathology (Luyckx, Goossens, Soenens, Beyers, & Vansteenkiste, 2005; Meeus et al., 1999; Schwartz et al., 2011) makes it possible to offer a more detailed evaluation of these issues. I will discuss the general theoretical question and the various empirical issues separately for studies using Marcia’s model and for studies using dual cycle models of identity formation.

## Do Identity Models Offer a Theory of Identity Development?

### Marcia’s Identity Status Model

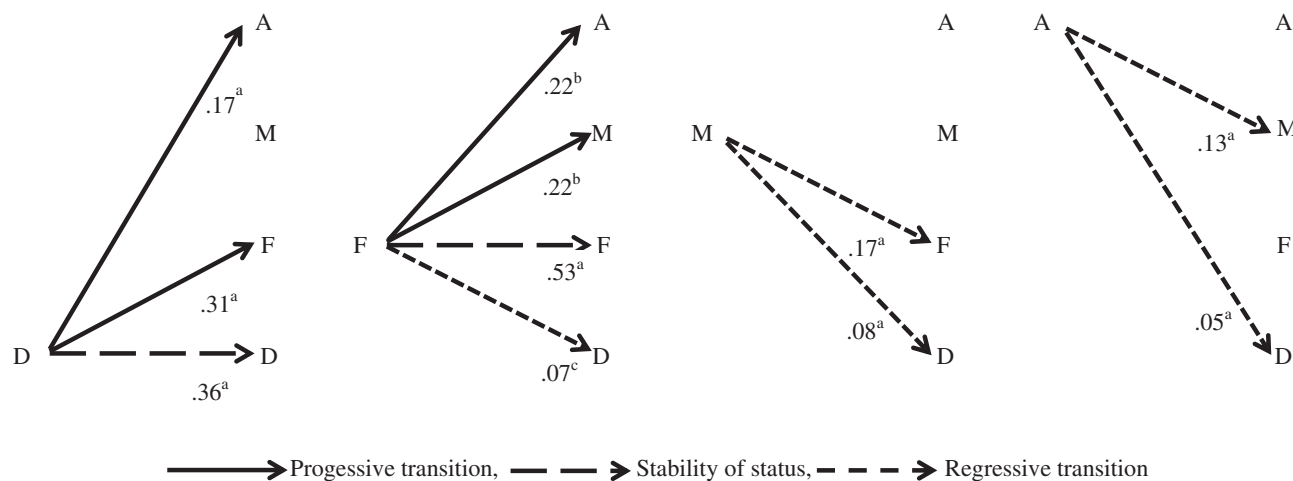
Inspired by Erikson’s views on identity formation, Marcia (1966) developed the identity status model. Marcia proposed two key processes of identity formation: exploration and commitment. Exploration indicates whether adolescents consider or have considered various alternative commitments in relevant identity domains. Commitment indexes whether adolescents have made choices in important identity domains, and are committed to these choices. Based on the absence or presence of exploration and commitment, Marcia distinguished four identity statuses. Identity diffusion (D) indicates that the adolescent has not yet made a commitment regarding a specific developmental task, and may or may not have explored different alternatives in that domain. Foreclosure (F) signifies that the adolescent has made a commitment without prior exploration. In moratorium (M), the adolescent is in a state of active exploration and has not made significant commitments. Identity achievement (A) signifies that the adolescent has finished a period of active exploration, and has subsequently made a commitment.

Although the developmental nature of the identity status model has been debated intensively, researchers agree on two issues. First, they acknowledge that Marcia’s identity status model does not offer a developmental theory (Meeus, 1996; Van Hoof, 1999; Waterman, 1982). Rather they suggest that it serves as a model to describe identity status transitions. Waterman (1982) introduced this theoretical restriction and based his view on the transitions in identity status that are possible between two points in time. The maximum number of transitions from 4 starting statuses to 4 target statuses is 16. Waterman noted that 11 out of 16

transitions are possible according to the identity status model and concluded that this implies that the model is not specific enough to qualify as a developmental theory. Secondly, identity researchers (Berzonsky & Adams, 1999; Kroger et al., 2010; Meeus, 2011) agree on the empirical support for the fundamental developmental hypothesis of the identity status model. This hypothesis states that the development of identity has a direction: progressive shifts in identity status, shifts from diffusion into the direction of identity achievement, are more frequent than regressive shifts from identity achievement into the direction of identity diffusion. In sum, the agreement on both issues implies that even if an identity status continuum exists, Marcia’s model does not qualify as a developmental theory of identity formation.

### Dual Cycle Models of Identity Formation

Dual cycle models spring from the notion that identity research should focus on the process of identity development. Grotevant (1987) stressed the process of finding an identity, whereas for instance Kerpelman, Pittman, and Lamke (1997) and Meeus (1996) stressed the process of continuous evaluation of identity once it has been formed. Dual cycle models have been developed by Luyckx and colleagues (Luyckx, Goossens, & Soenens, 2006; Luyckx, Goossens, Soenens, & Beyers, 2006; Luyckx et al., 2008) and by Meeus and Crocetti (Crocetti, Rubini, & Meeus, 2008; Meeus et al., 2010). The key theoretical innovation of dual cycle models is that they distinguish between two processes of exploration. Luyckx and colleagues make a distinction between exploration in breadth and exploration in depth, whereas Meeus and Crocetti distinguish between reconsideration of commitments and exploration in depth. Exploration in breadth or reconsideration of commitments captures Marcia’s original concept of exploration, but in a different manner. Exploration in breadth in the model of Luyckx and colleagues indexes the exploration of various alternative commitments before choosing one, whereas Meeus and Crocetti assume that individuals have already commitments from the beginning of adolescence on, and form final commitments by reconsidering the initial ones. Exploration in depth indicates whether adolescents evaluate and maintain their commitments in an active manner after choosing them. This differentiation in two forms of exploration results in two cycles in the process of identity development: identity formation and identity maintenance. Identity formation entails the dynamic of considering various identity commitments (exploration in breadth or reconsideration of commitments) and making a choice (commitment), whereas identity maintenance is the process of active versus passive preservation (exploration in depth)



**Figure 1.** Identity status transitions in longitudinal Identity Status Interview studies from the meta-analysis by Kroger et al. (2010). Within each of the four sets of transitions, transitions sharing similar superscripts are not different from each other. Transitions with a non-homogeneous effect size (D → M, M → M, M → A, A → F and A → A) have not been drawn.

of chosen commitments. In contrast to the dual cycle models, Marcia's model only addresses the process of identity formation. I also note that Luyckx and colleagues distinguish between two forms of commitments, but this distinction is not important for the present paper.

Although the authors of dual cycle models never claimed to have formulated a new theory of identity development, their models suggest two separate regions on the identity status continuum: a region of identity formation and a region of identity maintenance.

## Describing Identity Status Development: Five Empirical Issues

### Studies With Marcia's Model

The number of longitudinal studies on mean-level change of Marcia's identity dimension exploration and commitment is very limited (see Meeus, 2011). Therefore, the present paper restricts itself to longitudinal studies presenting findings on over-time change of identity statuses.

#### Identity Maturation

Kroger et al. (2010) conducted a meta-analysis of longitudinal change of identity statuses observed in identity interview studies, and Berzonsky and Adams (1999) presented an overview of longitudinal change of identity statuses constructed from two questionnaires: the Objective Measure of Ego Identity Status (OM-EIS; Adams, Shea, & Fitch, 1979) and the Extended Objective Measure of Ego Identity Status (EOM-EIS; Grotevant & Adams, 1984). Kroger et al. analyzed six longitudinal studies and found the probability of

progressive identity status change (D → F, D → M, D → A, F → M, F → A, M → A) to be .36 whereas that of regressive identity status change (F → D, M → D, M → F, A → D, A → F, A → M) was significantly smaller at .15. Berzonsky and Adams analyzed four longitudinal studies and found the percentage of progressive identity shifts to be 46.5, whereas the percentage of regressive identity shifts was significantly smaller: 24. So, both reviews found support for the fundamental developmental hypothesis of the identity status model.

#### A Continuum of Identity Status Change?

The second part of Waterman's fundamental developmental hypothesis specifies the identity status transitions that carry the progressive shifts in identity status. According to Waterman six progressive identity transitions are possible, see above, along with four regressive identity transitions: F → D, M → D, A → D, A → M. Waterman also suggests that identity progression and regression are processes with a chain of multiple identity transitions, for instance D → F, F → M, M → A or D → M, M → A for progression, and A → M, M → D for regression. In contrast to Kroger et al. (2010), Waterman considers the regressive identity transitions M → F and A → F to be theoretically impossible. Individuals in moratorium and achievement have considered alternative commitments and can therefore not regress to foreclosure, a status in which alternative commitments have never been considered. Note that identity progression includes transitions that are entirely consistent with the identity status continuum.

The meta-analysis by Kroger et al. presents identity status transitions found in six longitudinal studies and makes an empirical evaluation of Waterman's suggestions possible. The meta-analysis included data from 496 late

adolescents and emerging adults. About half of them were at university and the other half likely had a job, although explicit information is lacking here. Taking a closer look at the transitions reported by Kroger et al. (2010) informs us about the empirical viability of the identity status continuum, see Figure 1. The developmental continuum predicts neighborhood effects in the process of identity development that is higher transition probabilities for statuses that are closer to each other on the continuum than for statuses that are more distant from each other. For progressive identity transitions this means that, for instance, the transition probabilities of  $D \rightarrow F$  and  $D \rightarrow M$  should be greater than the probability of  $D \rightarrow A$ , and that the probability  $F \rightarrow M$  should be greater than the probability of  $F \rightarrow A$ . For regressive identity transitions this means that probability of  $M \rightarrow F$  should be greater than the probability of  $M \rightarrow D$ , and the probability of  $A \rightarrow M$  greater than the probability of  $A \rightarrow D$ . Figure 1 shows that *none* of these predictions are met in the analysis by Kroger et al. Note that the comparison of the probabilities  $D \rightarrow F$  versus  $D \rightarrow M$ ,  $M \rightarrow F$  versus  $M \rightarrow A$ , and  $A \rightarrow M$  versus  $A \rightarrow F$  could not be made because of the heterogeneity of the transitions  $D \rightarrow M$ ,  $M \rightarrow A$ , and  $A \rightarrow F$ , respectively. Homogeneity of transition probabilities, basically a limited range of these probabilities, is a requirement for comparison of the transitions. So basically, the meta-analysis by Kroger et al. does not offer the slightest support for an identity status continuum.

### Frequency of Identity Status Change

The meta-analysis of Kroger et al. only presents data from two-wave longitudinal studies, which of course makes it impossible to test whether the process of identity formation includes multiple identity status transitions. The results of Kroger et al., do however make it possible to calculate chances of the multiple identity transitions proposed by Waterman:  $D \rightarrow F$ ,  $F \rightarrow M$ ,  $M \rightarrow A$  or  $D \rightarrow M$ ,  $M \rightarrow A$ . Since the effect sizes of  $M \rightarrow A$  and  $D \rightarrow M$  were not heterogeneous, I decided to use the homogeneous mean effect size of progressive identity status transitions, .36, to make this calculation. Chances of the transitions chain  $D \rightarrow F$ ,  $F \rightarrow M$ ,  $M \rightarrow A$  then are:  $.31 \times .22 \times .36 = .024$ . Chances of the chain  $D \rightarrow M$ ,  $M \rightarrow A$  are:  $.36 \times .36 = .108$ . These findings imply that the frequency of a chain of three identity status transitions is very low and that the frequency of a chain of two transitions is low. This result holds for basically every chain of two or three transitions that can be calculated from the findings of Kroger et al.

### Theoretically Impossible Identity Status Transitions

As noted above Waterman (1982) stated that the transitions  $M \rightarrow F$  and  $A \rightarrow F$  are theoretically impossible. In

moratorium adolescents are exploring alternative commitments and in achievement they have made commitments after exploration. Therefore, they can never move to foreclosure, an identity status in which alternative commitments have never been considered. Kroger et al, however, found the transition  $M \rightarrow F$  to have a homogeneous transition probability of .17, and the transition  $A \rightarrow F$  to have a non-homogenous probability of .17. Theoretically, this is hard to understand. It could point to flaws in the administration of the identity status interview. Namely, perhaps in the interview at T2 individuals were not probed enough to be able to recall relevant identity explorations occurring in the distant past and therefore reported that they never did so. Alternatively, it could also mean that foreclosure is closure: the status does not tap into commitment without exploration in the past, but rather commitment without present exploration of alternative commitments. Such an interpretation makes both transitions  $M \rightarrow F$  and  $A \rightarrow F$  conceptually possible.

### Why Is Foreclosure an Adaptive Identity Status?

Foreclosure is considered to be a less adaptive identity status. Theoretically this is plausible since having strong commitments without exploration of alternative commitments could be seen as an identity that is not well-grounded. Therefore, foreclosure takes the second least favorable position after diffusion on the developmental continuum as used by most identity researchers (see above). Empirical findings, however, tell a different story. A review by Meeus et al. (1999) showed that both high-commitment statuses, identity achievement and foreclosure, have a higher score on various indices of psychological well-being than moratorium and diffusion. This finding is consistent with recent studies showing that commitment is negatively correlated with existential anxiety (Berman, Weems, & Stickle, 2006) and positively with happiness, positive affect and life satisfaction (Burrow & Hill, 2011). So, empirical research suggests foreclosure to be the most adaptive identity status, alongside achievement, and consequently also a status with higher chances to serve as the endpoint of identity development. Not inconsistent with this assumption, Kroger et al. (2010) reported that the over-time stability of foreclosure is .53. In sum, we can draw five conclusions from the longitudinal research into Marcia's model:

- (1) The studies show identity maturation;
- (2) There is no evidence at all that identity maturation unfolds as stepwise development along the identity continuum;
- (3) No information is available on the frequency of identity status changes during adolescence, but the probabilities of chains of three identity status transitions are extremely small, and those of chains of two changes are very small;

- (4) The theoretically impossible regressions  $M \rightarrow F$  and  $A \rightarrow F$  suggest that foreclosure might be closure;
- (5) Findings on the link between identity status and well-being suggest foreclosure to be a viable endpoint of identity development.

## Studies With Dual Cycle Models of Identity Formation

### Identity Maturation

Longitudinal studies with these models among others presented findings on mean-level change of separate identity dimensions and over-time change of identity statuses.

### Identity Dimensions

Meeus (2011) presented the first systematic review of mean-level change in identity dimensions (commitment, exploration in depth, and exploration in breadth/reconsideration of commitments). The review included longitudinal studies from Belgium, Germany, the Netherlands, and the United States published between 2000 and 2010, covered the ages 12–21, and found evidence for systematic identity maturation: increases in commitment and exploration, and decreases in reconsideration. Two recent Belgian (Luyckx, Teppers, Klimstra, & Rassart, 2014; Luyckx, Vansteenkiste, Goossens, & Duriez, 2009), and two Romanian studies using the same sample (Negru-Subtirica, Pop, & Crocetti, 2015; Pop, Negru-Subtirica, Crocetti, Opre, & Meeus, 2016) were not included in the review by Meeus. Both studies by Luyckx and colleagues found systematic identity maturation in late adolescence: increases in commitment and exploration. The studies of Negru-Subtirica et al. (2015) and Pop et al. (2016), however, reported relatively small and inconsistent changes in commitment and exploration. This might have been due to the limited time-span of both Romanian studies (3 waves within 1 year) and to the fact that identity insecurity, as indexed by exploration in breadth and reconsideration, may increase at the end of the academic year when it becomes clear that a number of students may not pass their exams.

### Identity Statuses

Meeus et al. (2010) estimated latent transitions to study the increase and decrease of identity statuses in a five-wave study of 923 early-to-middle and 390 middle-to-late adolescents, thereby covering ages 12 until 20. They found five identity statuses in each of the five waves of the study: diffusion (low on commitment [C], low on reconsideration of commitment [R], and low on in-depth exploration of

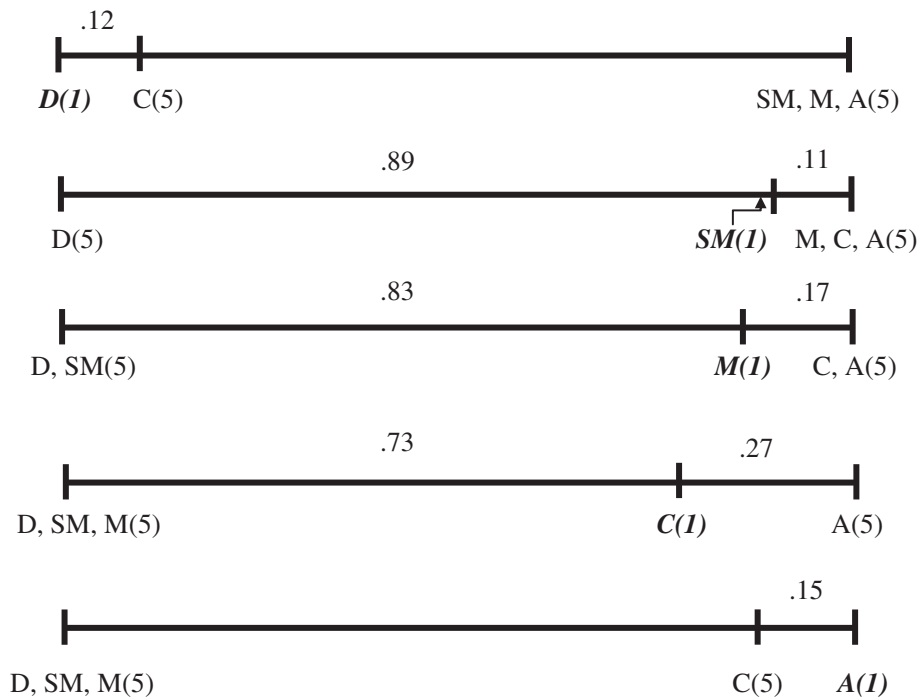
commitment [E]), moratorium (C low, R high, and E low), searching moratorium (C, R, and E high), closure (C moderately high, R low, and E low), and achievement (C high, R very low, and E high). In the Meeus and Crocetti dual cycle model of identity formation, the statuses moratorium (M) and searching moratorium (SM) index identity formation: an ongoing dialectic between making commitments and reconsidering them. The statuses closure (C) and achievement (A) index passive and active maintenance of strong commitments, respectively; in both statuses, commitments are strong, reconsideration of them is absent, and in-depth exploration of commitments is weak and strong, respectively. Meeus et al. (2010) found a significant decrease of diffusion, moratorium, and searching moratorium (from 34.1% to 18.8% across these statuses), along with a significant increase of closure and achievement (from 65.9% to 81.2%) across adolescence. These findings suggest that, during adolescence, individuals move out of the process of identity formation and into the process of identity maintenance.

Taken together identity maturation was found for two developmental indices: mean-level change of identity dimensions and the increase and decrease of identity statuses.

### A Continuum of Identity Status Change?

The study by Meeus et al. (2010) allows us to scrutinize whether there is an identity status continuum in a dual cycle model of identity formation. The design included an early-to-middle ( $n = 923$ ) and a middle-to-late adolescent ( $n = 390$ ) cohort that were followed across five annual waves of data collection. Note that the study included five identity statuses for each participant across five waves that resulted in over 6,500 data points of development of identity statuses, whereas the Kroger et al. (2010) meta-analysis included less than 1000 data points on the development of identity statuses.

To answer the question on the identity status continuum, I used the identity status transitions between T1 and T5 as presented in the paper by Meeus et al., see Figure 2. For each of the five T1 statuses (D, SM, M, C, and A) I calculated whether probabilities of transitions to each of the other four statuses were different from each other. This amounted to three tests for each of the T1 statuses (e.g.,  $D1 \rightarrow C5$  vs.  $D1 \rightarrow SM5$ ,  $D1 \rightarrow M5$ , and  $D1 \rightarrow A5$ , respectively). I used simple one-sample Chi-square tests with a Bonferroni correction for multiple testing for each of the five sets of transitions, thus applying a  $p$ -value of .0166 (.05/3). Additionally, I tested whether small transition probabilities were different from each other for each of the five T1 statuses (for instance,  $D1 \rightarrow SM5$  vs.  $D1 \rightarrow M5$ ,  $D1 \rightarrow SM5$  vs.  $D1 \rightarrow A5$ , and  $D1 \rightarrow M5$  vs.  $D1 \rightarrow A5$ ), also applying a Bonferroni correction.



**Figure 2.** Neighborhood continuums of identity status: Five-wave distances of identity statuses T1 (in bold and italics) to other statuses T5 from the study by Meeus et al. (2010). Identity statuses T5 that are grouped together share a similar distance to the T1 identity status. The distance between endpoints of each continuum is 1.00. For each of the continuums distances proportional to each other were calculated on a standardized scale of 1.00.

This series of tests resulted in five neighborhood continuums of identity status, one for each T1 status. Neighborhood effects in identity status transitions would be a minimal requirement for an identity status continuum: some identity statuses should be closer to each other across time than other statuses. Figure 2 clearly shows neighborhood effects. These neighborhood effects are very substantial in effect size. For each of the five neighborhood continuums, the closeness of the T1 identity status to some (sets of) T5 identity status(es) is 3.5–8.0 times bigger than to other (sets of) identity status(es). Five neighborhood effects stand out:

- D1 is developmentally closer to C5 than to SM5, M5, and A5;
- SM1 is developmentally closer to M5, C5, and A5 than to D5;
- M1 is closer to C5 and A5 than to D5 and SM5;
- C1 is closer to A5 than to D5, SM5, and M5; and
- A1 is closer to C5 than to D5, SM5, and M5.

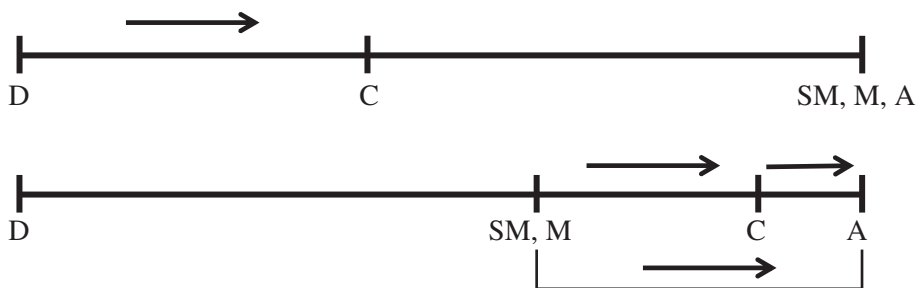
These results lead to three conclusions, see Figure 2 again:

- D and A form the relative endpoints of a continuum: D1 and A5 are maximally distant from each other as well as A1 and D5;
- SM and M take an intermediate position on a continuum: both SM1 and M1 are closer to C5 and A5 than to D5, and SM5 and M5 share a similar distance to D1, C1, and A1;
- C and A group together on the right-hand side of the continuum: C1 is closest to A5 and conversely A5 to C1.

One empirical finding is not consistent with the closeness of C and A: D1 is substantially closer to C5 than A5. One additional empirical finding adds to the separate position of C and A on the right-hand side of a continuum; their five-wave stabilities were .80 and .62, whereas the five-wave stabilities of D, SM, and M were substantially lower: .39, .18, and .39, respectively. This suggests that C and A are more likely to be endpoints of identity development than D, SM, and M. Note that I label C and A as relative endpoints of identity development to make clear that even these highly stable statuses are not perfectly stable. But before drawing a conclusion on the developmental continuum, I turn to the frequency of identity status change in the study by Meeus et al.

### Frequency of Identity Status Change

Since the Meeus et al. study included five waves, it offers the opportunity to study multiple identity status transitions within individuals. Remarkably, the study showed that 63% of the adolescents did not show any identity status changes during 5 years, whereas 37% changed their identity status. Of the last group nearly 80% changed identity status only once. These findings illustrate the limited dynamics of identity development, which is primarily due to the substantial stability of the statuses C and A: 52% (680) of the sample was in C or A in the first wave. This points to substantial heterogeneity in identity status change between C and A on the one hand and D, SM, and M on the other hand, respectively. Mean of five-wave stability of D, SM, and M



**Figure 3.** Developmental continuums of identity progression as found in the five-wave study by Meeus et al. (2010).

was .32. So the vast majority of individuals in these identity statuses at T1 made one transition during the study (68%).

It should be stressed that the Meeus et al. study not only showed advances in identity: at age 20 about 19% of the late adolescents remained in one of the non-adaptive identity statuses diffusion and moratorium.

### The Identity Status Continuum Revisited

The three conclusions mentioned above with regards to neighborhood effects (see Figure 2) and the observed frequency of identity status changes make clear that the relative endpoints of identity development are dependent on the initial identity status of individuals. The five sets of neighborhood effects therefore suggest not one but two continuums of identity status progression, see Figure 3. The first continuum is the first neighborhood continuum of Figure 2 and shows that D is developmentally close to C, and not to SM, M, and A. The continuum shows growth of commitments and exploration in depth without a lot of reconsideration of commitments. Obviously identity commitments can grow without considering alternative commitments. The second continuum combines the neighborhood continuums 2 till 5 from Figure 2 and includes various features of identity progression: C and A are close to each other, SM and M are closer to C and A than to D, and D is the opposite region to A. The continuum shows identity maturation after considering alternative commitments (SM → C, M → C, SM → A and M → A), or identity maturation that implies an increase of commitments and exploration in depth (C → A). Transitions from D to A or vice versa are virtually impossible (3%). Identity status change entails one step on both continuums, with steps into the direction of the right-hand side of the continuum being more prevalent than steps into the direction of the left-hand side. The relative endpoints of identity development on both continuums are the highly stable statuses, C, and A and C, respectively.

These empirically identified continuums are consistent with the distinction between identity formation and identity maintenance as proposed by dual cycle models of identity formation. The statuses D, SM, and M represent (the start of) identity formation, whereas the statuses C and A represent identity maintenance.

### Theoretically Impossible Identity Status Transitions

The issue of the theoretical impossible identity status transitions  $M \rightarrow F$  and  $A \rightarrow F$  in Marcia's model (see above) is absent in dual cycle models. This is due to the fact that (fore)closure in these models indicates that adolescents are not presently exploring alternative commitments (exploration in breadth; Luyckx et al., 2005, p. 608; Schwartz et al., 2011, p. 846) or are not reconsidering their present commitments (Crocetti, Rubini, Luyckx, & Meeus, 2008, p. 989), and not that they never have. Indeed, Waterman (2015, p. 334) also made this comment. So, although studies with dual cycle models sometimes use the label foreclosure, this is actually incorrect; closure is a more accurate label for the status high in commitment and low in exploration in breadth/reconsideration of commitments. Therefore, the  $M \rightarrow C$  and the  $A \rightarrow C$  transitions are very well possible. Individuals can move from a status where they think about alternative commitments (M) to a status where they don't (C), or from a status where they actively explored their present commitments (A) to a status where they don't (C).

### (Fore)closure as Adaptive Identity Status

Dual cycle model studies in Belgium (Luyckx et al., 2005, 2008), Italy (Crocetti, Schwartz, Fermani, Klimstra, & Meeus, 2012), the Netherlands (Crocetti et al., 2012; Crocetti et al., 2008 Turkey (Morsunbul, Crocetti, Cok, & Meeus, 2016) and the United States (Schwartz et al., 2011) have shown that (fore)closure is an adaptive identity status. In all these studies (fore)closures and achievers were found to have less depression and generalized anxiety and higher levels of psychological well-being, self-esteem and self-concept clarity than moratoriums, while in the majority of these studies (fore)closures and achievers also had more adaptive scores on these variables than diffusions. These findings confirm that closure is the most adaptive identity status together with achievement, and concur nicely with the position of these statuses on the adaptive right-hand side of the identity status continuum (see Figure 3), as well as with the high stability of both statuses. Partly, the adaptive nature of closure could be explained by the transition from achievement to closure. In the Meeus et al. study 26% of the achievers at T1 made the transition to closure at T5. So, for these adolescents closure could constitute

an automated achievement, indicating positive and secure commitments without the need of actively maintaining them.

The dual cycle model studies allow us to draw six conclusions. The first five run parallel to the conclusions drawn from Marcia's model earlier:

- (1) the studies show identity maturation in two developmental indices: mean-level change of identity dimensions and identity status transitions;
- (2) identity maturation unfolds systematically along the identity status continuums depicted in Figure 3;
- (3) the frequency of identity status change is limited: in the vast majority of individuals there is only one identity status transition in five annual waves;
- (4) in the dual cycle studies there are no theoretically inconsistent changes; this is due to the fact that dual cycle models replaced the identity status foreclosure with the status closure;
- (5) systematic links between identity status and various indices of well-being suggest that closure is a viable endpoint of identity development, along with achievement.

The considerable over-time stability of both statuses is consistent with this observation. The sixth conclusion is based solely on my re-analysis of the Meeus et al. (2010) study: there is considerable heterogeneity in change and stability of identity statuses. The vast majority of individuals in the initial statuses D, SM, and M (68%) change identity once in five annual waves, whereas less than half of the individuals in the initial statuses C and A do. The observed heterogeneity of stability and change is consistent with the dual cycle distinction between identity formation and identity maintenance. The identity formation statuses D, SM, and M are much more likely to change than the identity maintenance statuses C and A.

## Convergence and Divergence Between Marcia's Model and Dual Cycle Models

The analyses above lead me to the conclusion that Marcia's model and the dual cycle models converge for three of the five empirical issues and diverge on two of them and an additional one.

### Convergence

#### Identity Maturation

Studies with both sets of models show identity maturation, that is identity development, out of the identity status diffusion into the direction of the status achievement. In

addition, the dual cycle models show progressive mean-level change of the various identity dimensions.

#### Frequency of Identity Status Change

The dual cycle model study of Meeus et al. (2010) showed that the vast majority of the adolescents that change their identity status do so only once. A caveat to this finding is that the Meeus et al. study used annual measurement waves and therefore could have missed identity changes occurring within years. However, the low frequency of identity status change is not inconsistent with my analysis of the probability of multiple identity status transition in Marcia's model. This analysis showed a chain of three transitions to be highly unlikely ( $< .05$ ) and a chain of two transitions to be unlikely ( $< .11$ ).

#### (Fore)closure Is an Adaptive Status

Studies with both sets of models show that adolescents in (fore)closure have a very adaptive and healthy profile. This finding suggests that (fore)closure is an adaptive endpoint of identity development.

### Divergence

#### Continuums of Identity Status Change

This is the major divergence between studies with Marcia's model and a dual cycle model. The meta-analysis of Kroger et al. (2010) revealed no neighborhood effects at all in transitions of identity statuses in longitudinal studies with Marcia's model. Consequently, no indications for a continuum of identity status change were found. In contrast, the dual cycle study by Meeus et al. (2010), showed two interpretable continuums, see Figure 3. These continuums differ substantially from the  $D \rightarrow F \rightarrow M \rightarrow A$  continuum proposed by Waterman. The newly found continuums adequately represent the cycles of identity formation and maintenance.

#### Theoretically Impossible Identity Status Transitions

The redefinition of foreclosure into closure ensures that this problem is absent in dual cycle models, see above. The problem is present in Marcia's model.

#### Heterogeneity in Identity Status Change

The dual cycle model study by Meeus et al. (2010) showed substantial heterogeneity in changes in the five identity statuses: less than half of the adolescents in A and C changed identity whereas the vast majority in D, SM, and M did (68%). This is due to big differences in stability between A and C on the one hand, and D, SM, and M on the other hand. In Marcia's model this heterogeneity is absent or untestable: stabilities of D and F were not different from



each other, and non-homogeneous effect sizes of stabilities of M and A precluded comparison with stabilities of the other statuses.

## Theoretical Implications

I discuss theoretical implications of the present analysis for the study of identity formation and for the study of adolescent development in general.

## Identity Development

The core question of the present paper is whether there is a developmental continuum of identity status. The answer is yes, but there are two developmental continuums instead of one and they look very different from the original conceptualizations by Marcia (1967) and Waterman (1982). The most advanced research to date does not suggest an identity progression continuum  $D \rightarrow F \rightarrow M \rightarrow A$ , but the continuums  $D \rightarrow C$  and  $D, SM/M \rightarrow C/A, C \rightarrow A$ , and additionally suggests a process of identity status change that entails one identity status transition instead of multiple transitions. The present analysis also suggests that until now Identity Status Interview research (Marcia, 1966) has not been able to come up with an empirically viable model of identity development. The neighborhood effects that are needed to build an identity status continuum were almost totally absent in Kroger et al.'s meta-analysis of longitudinal studies with Marcia's model. This may be due to the small sample sizes of the various studies leading to small statistical power to detect differences in identity status transitions. But even with bigger samples, Marcia's model does not have an explanation for why the theoretically impossible identity status transitions  $M \rightarrow F$  and  $A \rightarrow F$  were found empirically.

The newly found identity status continuums allow us to be more specific about the process of identity development in adolescence. Identity development can be framed in terms of identity formation and maintenance, transient states and relative endpoints of development, normative development, loss of relative plasticity, neighborhood effects, and the frequency of identity status change.

### Formation and Maintenance of Identity: Transient States and Endpoints of Development

The identity statuses D, SM, and M represent the (start of) the process of identity formation, whereas C and A represent the process of identity maintenance. So, D, SM, and M represent transient states that index the process of forming commitments, and C and A represent relative endpoints of development that index two distinct ways to maintain

formed commitments. Empirical proof for the distinction between transient states and normative endpoints lies in the substantially higher stability of C and A (80 and 62%) as compared to D, SM, and M (between 18 and 39%).

### Normative Development: From Formation to Maintenance

The new identity status continuums show that in general adolescents move from the transient states to the relative endpoints of development: from D to C, and from SM and M to C and A, or in other words, from formation to maintenance. This process of normative development implies that there is a loss of the relative plasticity of identity. In the process of identity formation, the dynamic of making commitments with or without considering alternative commitments is at play and the plasticity of identity is high. In the process of identity maintenance commitments are quite stable and the plasticity of identity is low.

The observed neighborhood effects and the frequency of identity status change specify the process of identity development. Identity formation as depicted on both identity status continuums is due to the fact that SM and M are developmentally closer to C and A than to D, and D is developmentally closer to C than to SM, M, and A. Identity maintenance results from the fact that C and A are developmentally closer to each other than to D, SM, and M. The finding that identity status change is basically a single step process and not a chain of changes additionally reveals that identity development is not a stage sequential process and not similar to stage models of for instance cognitive (Piaget, 1954) or moral (Kohlberg, 1981) development. Finally, the findings of the study by Meeus et al. show multi directionality of development. At the age of 20, a substantial number of late adolescents were in the statuses M, C and A, with percentages ranging between 13 and 55%, respectively.

In this way, the process of identity development is consistent with key assumptions of life-span developmental psychology as proposed by Baltes (1987) and can be framed in its concepts of normative development, loss of relative plasticity and multi directionality.

### Differential Relative Endpoints of Identity Development: Achievement and Closure

High longitudinal stability qualifies C and A to be relative endpoints of identity development. This developmental position is consistent with the systematically found adaptive nature of C and A (see above). Further, Meeus et al. found a remarkably high prevalence of C at the end of adolescence: 55%. This suggests that for a small majority of adolescents identity development ends in a status of positive commitments of modal strength that are secure (no reconsideration) and do not require a lot of identity work to maintain them (low level of exploration in depth). Basically C stands for

positive, secure and automatic commitments. A differs from C in two respects: the level of commitment is higher and the level of exploration in depth is considerably higher. Indeed, A is an identity in which adolescents do a lot of identity work to maintain their very strong commitments. The prevalence of A was 26% at the end of adolescence, suggesting that around a quarter of adolescents belong to this group of individuals that aim for a strong and active identity.

In particular, the observed difference in exploration in depth between C and A is consistent with a series of other research findings. Crocetti, Rubini, Berzonsky, and Meeus (2009) found a very strong correlation between exploration in depth and Berzonsky's informational identity style. Marcia (1980) reported achievers to be more cognitively advanced and to perform better on cognitive tasks than foreclosures. Carlsson, Wängqvist, and Frisé (2015) found a stronger elaboration and deepening of identity narratives in achievers as compared to foreclosures. These findings all testify that achievers tend to process more information and cognitively elaborate on their commitments as compared to (fore)closures.

A limitation to the three conclusions above is that they are based the Meeus et al. (2010) study that focused on development of global identity. Analyzing separate domains of identity could lead to other conclusions.

## Adolescent Development: Maturation

The results of the present review concur nicely with the findings of a recent review by Meeus (2016) on psychosocial development in adolescence. Using various developmental indices, the review showed systematic maturation of the self (personality and self-concept clarity) in adolescence in various countries. For instance, mean-level increases in the personality traits emotional stability, conscientiousness, openness and extraversion were found. Similarly, rank-order stability, that is the extent to which the relative position of individuals becomes more stable in a sample across time, of personality traits and self-concept clarity increased in adolescence.

The main conclusion of the present review is that dual cycle models of identity formation show identity maturation in adolescence and also reveal two continuums of identity status on which this development unfolds. Theoretically, identity development can be described as a process that moves from identity formation to identity maintenance.

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